

Research - Benchmarking Methodology

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Abstract

Standard benchmarking methodology for API-OSS performance testing.

Benchmarking Methodology

Overview

Standard benchmarking methodology for API-OSS performance testing.

Test Environment

hardware:

```
cpu: "Intel Xeon Platinum 8375C @ 3.5GHz"
cores: 32
ram: 64 GB
network: "10 Gbps"
storage: "NVMe SSD"
```

software:

```
os: "Ubuntu 22.04 LTS"
kernel: "6.2"
rust: "1.75"
config: "Production default"
```

Test Scenarios

Baseline

```
scenario: "No plugins, no auth"
endpoint: "GET /v1/health"
metrics:
  - Throughput (req/s)
  - P50 latency
  - P99 latency
```

Authenticated

```
scenario: "Auth enabled"
endpoint: "POST /v1/chat"
```

```
payload: "Minimal request"
auth: "Bearer token validation"
```

Rate Limited

```
scenario: "Rate limiting enabled"
endpoint: "POST /v1/chat"
rate_limit: "1000 req/min"
payload: "Minimal request"
```

Full Pipeline

```
scenario: "All features enabled"
auth: true
rate_limit: true
plugins: 2
audit: true
```

Results Format

```
## Scenario: [Name]
| Metric | Value |
|---|---|
| Throughput | XX,XXX req/s |
| P50 latency | Xms |
| P95 latency | Xms |
| P99 latency | Xms |
| Error rate | X.XX% |
| CPU usage | XX% |
| Memory | XXX MB |
```

Next

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See Also

Related research, architecture, and whitepaper documentation.

- [Research Overview](#)
- [Architecture Overview](#)
- [Whitepapers](#)
- [Performance Research](#)